NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS AND SCIENCES.

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RAYNOLDS & NOURSE, *Proprietors.* OFFICE, QUINCY HALL, BOSTON. S. W. COLE, *Editor.*

THE APPLE TREE BORER.

One of the greatest of all evils that the fruit grower has to contend against is the apple tree borer, which also attacks the quince, mountain ash, white ash, locust, hawthorn and the aronias.

This borer is the larva of the two-striped saperda, (*Saperda bivittati*,) which is truly represented by the following cut. This is the beetle or insect in its perfect state.

This figure shows the size of the insect. The upper part of the body is marked by two longitudinal white stripes, among others of a light brown. The face antenuæ, the under side of the body and legs are white.

This beetle comes forth from the tree in June, in the night, flying from tree to tree for food or companions, resting in the day time among the leaves on which it feeds. In June, July and sometimes in August, it deposits eggs on the bark of the tree, at or near the ground.

The larva or young borers from these eggs are fleshy, round, whitish grubs, without legs. This grub eats through the bark, and remains there the first winter. The next season it penetrates the wood, throwing out dust or cuttings, like saw dust, by which it may be traced, generally ascending, as it proceeds, and boring deeper into the tree. Its whole passage is usually about 12 to 15 inches. It becomes a full grown borer as here represented.

The third season, nearly two years from its entrance, it approaches the surface, where it undergoes its final transformation, becomes a beetle and leaves the tree.

Rarely the borer *gets off the track*, and descends; sometimes it enters the tree several feet above the ground, and seldom it enters the limbs of the tree.

Keep the trees well washed and the bark smooth, and keep the grass, weeds, and rubbish away from the trees that they may be examined conveniently. During the time of depositing the eggs, wash the trees occasionally with a rather strong lye of wood ashes, or a solution of one pound of potash to two gallons of water. A strong lye is liable to injure the trees. These and other corrosive substances may destroy the eggs, or annoy the insects; but they are not always sure. The borers may enter between the roots that branch high, where washes do not affect, or the eggs may not be destroyed; therefore keep the trees smooth and clear of every thing around them, and examine them often; and when the young borers have just penetrated the bark, they are easily destroyed. So attend to them the first season.

Make a wash of two quarts of soft soap, or whale oil soap, half a pound of sulphur and two gallons of water. Add also camphorated spirit, asafœtida, tobacco and other offensive substances, and wash the tree with it. A little clay or lime added will make a coating holding these substances, which may be offensive to the beetle or young borers, and prevent their operations.

After the borers have penetrated the trees they may be cut out with a chisel or gouge: or they may be destroyed by running a wire or other flexible substance into the hole. They have also been destroyed by putting a match of burning brimstone into the hole, or a piece of camphor and plugging the hole.

Whale Oil Soap. — In answer to the inquiries of a subscriber on this subject, we remark that this article can be had at the agricultural stores in this

city. It is put up in cases at a dollar each. Sometimes in tin cans at 50 cents each. It is a cheap wash, as it is very strong, and is diluted with a large quantity of water.

To wash the bodies of trees, add only a small quantity of water, that it may be very strong. But to kill insects on the foliage of trees, use 36 parts of water to 1 of soap; and then it must not be applied in a hot sun, but when the sun is nearly down, or when it is cloudy.

STEWART'S PATENT STUMP MACHINE.

In our paper bearing date of February 1st, we gave our readers a representation of this machine. We would again call attention to it, for the purpose of describing its operation, which we had the pleasure of witnessing on the 4th inst.

The machine consists of a *beam* or *lever*, thirty feet long, a *chain* of twelve rods, and *shears* about sixteen feet in perpendicular height; *scissors* about six feet in height may sometimes be substituted for these. At five feet from the end of the lever a chain is attached, which, being passed round a stump or rock, forms the fulcrum on which the lever turns. The chain is attached to the other side of the lever at distances from one to five feet from the fulcrum. The weight of the chain is about two thousand pounds; but as it is divided into sections of eight or ten feet, it is not difficult of transportation, and the weight is of much advantage in the operation of the machine. By applying a power of one ton at the long arm of the lever, it may be made to exert a force upon the stump equal to four hundred tons.

The exhibition which we witnessed was in Fitchburg, upon a field owned by Rev. Mr. Trask, of that place. This field had been covered with a growth of pines, which were cut off three years ago, and the stumps had begun to show but slight signs of decay. At 9 o'clock, A. M., two or three hundred people were present, and many hundreds more must have witnessed the operation during the day. Among these were many practical farmers and mechanics, who manifested much interest in the exhibition, and perfect satisfaction as to the result.

During the two hours we were present, we saw about thirty stumps pulled, varying from one to two and a half feet in diameter, and having roots extending in some instances over a circle of twenty-five or thirty feet. By using the shears the largest stumps were drawn out in four or five minutes, and simply by means of the lever, five smaller ones were removed in less than ten minutes. It was not necessary to move the machine to effect this, since nearly three acres can be cleared with it in the same position. Three or four stumps can be pulled at once when near each other, with nearly as much ease as one; and to remove one hundred from a field would be no more than a day's work for three men and a pair of horses or oxen.

These machines are manufactured by Messrs. Willis & Kilburn, of Orange, Mass., at a cost of about three hundred dollars, including the right of use in two or three towns.

The ease, regularity and quickness with which this machine performs its work, must recommend it to the consideration of all who have such work to be done; and as the cost is not great, there should be at least one in every neighborhood. It needs only to be seen to have its utility duly estimated, and it will at once supercede the old method of digging out the stumps, at a greater expense, and a useless sacrifice of time.

We hope other agricultural papers, particularly those at a distance, will notice this machine, and the manner of its operation, and thus aid in giving it that extensive popularity which it deserves.

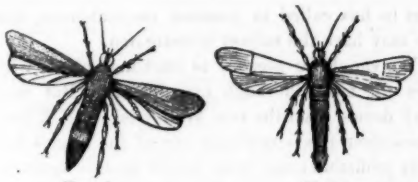
CORN FOR FODDER.

There is no plant cultivated in this country that yields so large a crop of excellent green and dry food for stock as Indian corn. It also affords the advantages of rapid growth and easy culture. As a substitute for pasturing, it is one of the very best, being almost equal to luxuriant grass, and far superior to scanty herbage, which is frequently all that cattle can obtain, in time of drought, which often occurs late in summer and early fall. When corn is grown of a suitable size, and well cured, it is equal to good hay for winter food.

In the older parts of the country, particularly among milkmen around cities and large towns, corn for fodder has been considerably cultivated for several years; and they know the value of it well. But in the interior, farmers have paid less attention to the subject, and in consequence, in time of drought, late in the season, they often have to feed their cattle from the barn to supply the deficiency of pasturage; and in this way they reduce their winter supply for fodder, which is already sufficiently small.

It is yet in season to plant corn for late green crops, or of dry fodder. If the land be rather coarse and rough, harrow frequently, until the soil becomes a fine tilth, manure well and mix the manure intimately with the soil. Wood ashes is an excellent manure in part. Sow pretty thick in rather broad drills about three feet apart, and when the plants are sufficiently large, run the cultivator between the drills, and give a light dressing with a hoe. No more cultivation will be needed, as the plants will soon shade the land and keep down the weeds. Will farmers who have never tried the value of fodder corn, make an experiment on a small scale?

When the heart is pure, there is hardly anything which can mislead the understanding in matters of immediate personal concernment.



Female. *Male.*

Borer. *Cocoon.* *Pupa state.*

THE PEACH TREE BORER.

Ægeria exitiosa.

We have recently published some articles on the peach tree borer and the mode of destroying it. We now give our readers a representation of it in its different stages, with a description; and we hope that all who have peach trees will examine them thoroughly, and not allow an insect to which they have easy access, and which may be prevented from its operations by timely care, or arrested with facility in its course of destruction, to destroy beautiful flourishing trees that yield one of our most luscious fruits.

The perfect insect resembles a wasp. The sexes differ widely. The body of both is mostly steel blue; the wings of the male are transparent, bordered and mixed with the same blue color. The fore wings of the female are blue and opaque; the hind wings like those of the male. A broad orange belt in the middle of the abdomen. During the summer, the eggs, of a dirty white hue, and scarcely perceptible to the naked eye, are laid on the tree, at or very near the surface of the ground, in little punctures, and covered with greenish slime. In a few days they hatch, and the young, whitish worms eat through the bark, and girdle the tree, passing between the bark and sap wood, eating both.

Some observers of this insect say that when nearly a year old, they make their cocoons, usually below the surface, and soon change to the pupa state, and shortly come forth in the winged state as represented in the cut. This insect prevails to a great extent, especially in the old States, and is very destructive when great care is not taken to prevent their increase or destroy them.

In a late number of our paper, a correspondent remarks that the borer stays in the tree the second year. Perhaps this is the case with those that hatch late, while those that hatch early may come to the perfect state the second year. They are found of various sizes, through the season.

☞ A young man who has recently taken a wife, says he did not find it half as hard to get married as he did to buy the furniture.

TO DESTROY INSECTS.

One of the most convenient and effectual modes of destroying numerous insects of various kinds, among fruits, is to hang among the trees and bushes transparent bottles, filled two-thirds or three-quarters full of water sweetened with molasses. Insects of almost evey description will enter these bottles and be drowned. When they become full, empty them, and renew the sweetened water.

Pitchers, mugs, and other similar vessels, filled one-half or two-thirds full of sweetened water, and hung in the trees obliquely, or as they will naturally hang by the handle, will answer the same purpose. When many of these vessels are hung in a fruit garden near the house, flies and other insects become scarce in the house, in consequence of the vast numbers destroyed in this way.

NOTICES OF PUBLICATIONS.

Patent Office Report.—We have received the second part of this report, which is on the subject of agriculture. It contains an account of the progress of agriculture in different sections of the Union, tables of statistics, and a large amount of valuable practical matter. As it has been prepared by Dr. Lee, who is well known for his zeal and intelligence in this cause, it may well be supposed that this is much superior to any previous reports on this subject, which have too often been made up of a large promiscuous mass of matter, without the exercise of a sound judgment as to its value.

The Complete Fruit and Kitchen Garden contains a large amount of valuable matter in a small space, and at a low price. Hotchkiss & Co., Boston.

ACKNOWLEDGMENTS.

We have received of Capt. Amos Perry, South Natick, some sweet apples, of a moderate size, yellowish russett color. The quality is very good, and they keep well. We do not know the name.

Of Mr. Bowen Harrington, Lexington, Baldwin and other apples, very fresh and excellent for the season, that were kept on a board, in a barn cellar, exposed to the air ever since they were taken from the trees.

Rye Flour, when made into good light bread and allowed a day or two to ripen, is very nutritious and wholesome. Rye flour more nearly resembles wheaten flour in its composition than any other; it has, however, more of certain gummy and sugary substances, which make it tenacious, and also impart a sweetish taste. All grains and roots which have much starch in them undergo a great change in their chemical composition by baking—flour becomes more nutritious, and more easily digestible, because more soluble. This is also the case with flour; that is, the starch, gluten and sugar of potatoes, when baked, or what is still better, when roasted in the hot embers of an old-fashioned farm-house fire.—*American Agriculturist.*

For the New England Farmer.

WHITE WEED---STRAWBERRIES.

Mr. Editor:—Dear Sir,—What is to be done with what is commonly called *White Weed*, to eradicate it from our pastures? Upon the authority of some of our agricultural publications, I have, for the last three or four years, mowed it just before flowering. But it seems this year as if there were a hundred flowers where there was but one last season. Sheep, it is said, by being turned upon the lot, will soon destroy it. But the sheep I pasture are cows, and they don't touch it in any stage of its growth. It would seem as if I had tried the scythe long enough, provided it springs from *seed* and not from *roots*.

I notice in your number just received, that in speaking of strawberries, you say, "*Willey is much the same, if not identical with the Hudson, cultivated so extensively about Cincinnati.*" Now it would be presumptuous in me to enter the lists against you. So, presuming that the author of the "American Fruit Book" writes from knowledge, I am bound to conclude that I have not the *genuine* plants of one or both of these varieties of the strawberry.—True, the Willey was obtained from the late President of the Massachusetts Horticultural Society, and the Hudson from Mr. Ernst, lately and perhaps at present President of the Cincinnati Horticultural Society; affording a presumption that each variety was genuine. But one or the other is false, if your remark is true. For I should as soon say of the pine-apple and peach that they were very much the same, if not identical, as of the fruit of these different vines. If great difference in form, color, flavor of fruit, as well as foliage of plants, gives presumptive evidence of difference in variety, then are the Willey and Hudson, as grown by me from plants procured as stated above, as unlike each other as possible. May you not be mistaken in the genuineness of your plants?

Yours respectfully,

Worcester, June 7. William Lincoln.

Remarks.—We know of no remedy for the White Weed, excepting thorough and good cultivation. This will subdue it in tillage; and when the land is laid down to grass in good condition, the luxuriance of this crop will check it; but if the land be not kept in good condition by top-dressing, or frequent tillage and manuring, the grass will fail, and white weed come in as a rotation to occupy the poorer soil. When this plant first makes its appearance in a lot, it should be thoroughly eradicated just as it begins to blossom, so that there will be neither root nor seed for it to start from. Will some of our readers give us more light on this subject?

As to the Willey strawberry, ours came from Mr. F. R. Elliott, of Cleveland, Ohio, through the nursery of C. Downing, Esq. We were informed that Mr. Elliott considered it very similar to, if not identical with, the Hudson cultivated about Cincinnati, and we considered our authority good, and have made our statements accordingly. Yet we may mistake, and our correspondent is liable to mistake also. Let who will mistake, we are pleased that he has called in question our statement, that we may have the subject investigated.

We should be pleased to exchange plants with him for more thorough examination. But who shall decide what the true Willey is? Mr. Elliott raised from this strawberry one of the largest and most profitable crops ever raised in this country. Will Mr. Lincoln have the goodness to inform us and our readers which of his two varieties that he has mentioned are the best, and how they compare with our most valuable kinds generally cultivated. This information will be useful to many cultivators, as the Willey, and the Hudson of Cincinnati, are but little known in this section. In the vicinity of Cincinnati, the Hudson is preferred decidedly to any other variety.—Editor.

For the New England Farmer.

AGRICULTURAL PAPERS---FARMING---CHICKENS.

Mr. Cole:—I was a subscriber to your New England Farmer the first two years of its existence, and then I thought I would rest awhile; but I felt its loss, and early in the spring I again subscribed, receiving the back numbers. I find it an interesting and useful paper for the farmer, containing many valuable suggestions and the experience of men who have devoted their energies to this department of labor.

Some men pursue this occupation as secondary to some other business, supposing that it cannot be rendered a source of profit. Perhaps they may have inherited some land, and cultivated it as their fathers and grandfathers did before them, themselves depending upon professional, mercantile or mechanical business for their gains. I grant that oftentimes much more money may be made in a given time by one of these occupations than by cultivating the land; but then the cultivation of the soil affords sources of pleasure and real profit to the reflective mind which these do not.

I think you stated that one of your objects in the publication of this paper was to elicit facts. I have one to communicate respecting some fowls which I am raising. I have four chickens which were hatched the second day of last April. Three of them are a cross of the Black Italian, and one of them I think is the Lawrence breed. I went to my barn early in the morning the day they were thirty-eight days old, and found them upon the hen-roost, sitting there at a distance of five or six feet from the floor, having been obliged to fly up there the night before. I weighed them at 59 days old, and the four weighed 5 lbs. 14 ozs. They have received no extra care, having been hatched in a cold, rainy season. This I think is an uncommonly rapid growth. M. W. Putnam.

North Danvers, June, 1851.

Remarks.—We are pleased that Mr. Putnam found an inconvenience or loss in doing without an agricultural paper; and it would be well if many others were aware of the loss they sustain in this way.

It is no wonder that there should be so many different opinions about the profits of farming, as good

farming requires skill and experience, also industry and economy, to make it profitable; and how can a person succeed who does not possess these requisites to success, and does not exert himself to acquire them, for such there are; but we are happy to say that such farmers are growing less and less in number. The general spirit of improvement that now pervades the land is arousing almost every one to action.—EDITOR.

ANALYSES OF THE PEACH TREE.

Having observed in a late number of the Ohio Cultivator an analysis of a seedling peach tree by Prof. Emmons, as well as my analysis of some cultivated kinds, and there appearing to be considerable difference in comparing the two together, which might induce with some persons not thoroughly conversant with such subjects an opinion that there was some quackery in the case, I have thought it necessary to present a comparison of the two analyses in a different form, more intelligible.

Prof. Emmons, it will be seen, has separately analyzed the wood of limbs, bark of limbs, wood of root, wood of trunk, and bark of trunk. But my analysis was of the smaller limbs only. At the same time, I chose the smaller limbs as most likely to contain the largest proportion of the most rare and valuable constituents, as the alkalies and phosphates. The plan of analyzing the different parts of the tree throughout is no doubt preferable to that of some part only, but an analysis of the whole tree would answer every purpose. I have brought the statements of both analyses into nearly the same form, by rejecting the carbonic acid, as an unimportant constituent of plants, as Prof. Emmons has done from his, adding into one sum the materials of one kind in every part of the plant:

Analysis of Professor Emmons.

Potash	10.69
Soda	6.72
Chloride of Sodium	1.25
Sulphuric Acid	6.43
Lime	31.27
Magnesia	6.28
Phos. of Perox. Iron	1.15
Phosphate of Lime and Magnesia	23.72
Organic matter	5.16
Insoluble Silica and Charcoal	7.30
	99.96

Analysis of B. Kirtland.

Potash	16.11
Soda	2.57
Chloride of Sodium	.89
Sulphuric Acid	1.70
Lime	31.97
Magnesia	9.06
Phos. of Perox. Iron	2.80
Phosphate of Lime	27.90
Silica, Sand and Charcoal	5.98
Per. of Manganese	1.02
	100.00

I think it is quite probable that the articles in the above tables that are nearly related in their qualities, as the potash and soda, lime and magnesia, iron and manganese, sulphuric acid and phosphoric acid, may fill the place of each other in the composition of plants in cases where one or the other may be deficient in the soil that supplies them nutriment. Now the potash and soda added differ but little in the two tables—the chloride of sodium rather more—the sulphuric acid is more than three times the amount in the statement of Prof. Emmons of that of mine. Lime about the same. Magnesia one-half more in my account than in Prof. E.'s. Phosphates of lime and magnesia not much different, so of the silica and charcoal. Prof. E. found five per cent. of organic matter, which I did not look for, as there is no such an article mentioned in the rules of analysis I have studied. I found one per cent of manganese, which he did not. We took the most distant extremes in our choice of subjects for analysis. He selected a natural seedling tree of the slowest growth, poorest fruit, and wildest nature. I chose the most highly cultivated kinds, of the finest quality, vigorous growth, in new land, a chesnut ridge, limestone soil, well manured, young trees of the highest vigor, good bearers of fruit; such trees, with their large glossy leaves and bright colored twigs, stocky growth, differ as much from the slender growth, pale color, and lusterless leaves and twigs of the natural, as the wild savage of the wood from the most refined and cultivated person in civilized life. So we may infer that, as the natural and cultivated peach differ so much in their external appearance and the excellence of their fruit, so we will find as much difference in their chemical constitution as our respective analyses would indicate. Nature employs more of the alkalies and phosphates in perfecting the seeds of fruits and grains than in their stalks. So likely in the fine fruits more of these constituents are employed than in the hardy wilding tree.

BILLIUS KIRTLAND.

Poland, Ohio, March 3. *Ohio Cultivator.*

BREAKING COLTS.

MR. EDITOR:—I have concluded to furnish a few thoughts for your excellent paper, upon the subject of rearing and breaking young horses. I consider raising horses as profitable to farmers, in many portions of this State, as any branch connected with our agricultural interests.

But the profit, in rearing horses, depends very materially upon the manner of their training. Indeed, many a noble animal has been spoiled, or nearly so, by bad management in breaking. Often the constitution is so broken, that the naturally nettlesome creature is despoiled of all spirit or ambition.

I would, in the first place, state that there is a great fault among farmers generally, with regard to keeping colts. They should never be suffered to get poor, at least not until four years old. The shape and form, as well as size, of many colts, are materially impaired by poor keeping the first two winters. If a colt is suffered to get down thin in the winter, it will not only require the greater part of summer to get him back where he was the fall before, but his head and limbs will grow large and ill-shaped.

The colt, at weaning, should be put into a field where there is water, with a trough to feed grain; and from that time until one year old, should have grain every day. Many colts are spoiled during the first three months after weaning. Taken from the mare, fat, round and handsome, they are turned where they have but little feed, less water, and no grain, and left to run until almost starved to death —then kept the rest of the winter upon straw, without shelter. In the spring they are lousy, and but just alive, and never so good care afterward cannot make such colts what they would otherwise have been.

Colts should have grain every winter until four years old. I would commence breaking the winter before three years old. See that the colt is in a good, healthy, thriving condition. Never break a poor, weak colt, unless you want to break his constitution. I would get a new rope 7-8 inch in diameter, of which make a slip-halter; a larger rope would be burdensome—one much smaller would be apt to indent the grisly part of the nose, and thus injure the shape of the face. When haltered the colt should not be tied fast, as they will be liable to pull and strain the cords of the neck; but hold the rope with sufficient strength to keep them, slackening up occasionally, to relieve the muscles of the head and neck.

When sufficiently subdued to be managed by one hand, which will generally take but a few moments, the person holding the rope should walk to and fro before him, giving at each side a slight jerk upon the rope, which, in a little time, will learn the animal to follow the string before it is pulled. This should be done daily, until he can be led, or handled, anywhere. Next apply the bit. Never use a curb, but take a bridle with a common snapple bit, with gag reins to hold up the head, and martingals to hold in the nose—the reins attached to a crupper and fastened firmly on the back with a circingle. The reins should not be drawn too tight at first, but may be buckled up occasionally, until drawn close, and kept in this condition the greater part of the day, for at least one week, taking off the bit at night. While bitting, handle, curry, and drive around.

Next put on the harness. Secure, if possible, a harness with gag reins, crupper, martingals, &c.; buckle all up close. After a little, attach to some light vehicle, and drive on a walk—learn a colt to walk first, a quicker pace can be acquired afterwards. A colt should never be put to a load requiring his utmost strength to move, until four years old. Colts may be driven in a harness, with a light load, without injury, much younger than they can be used under the saddle. They should be trained in the stable, to understand and obey all that is said to them. Learn a colt to go, and back, and hold back, by the word of mouth. Never whip, except in the stable. If a young horse is inclined to stop, or balk, as it is called, (when they manifest this disposition) stop them, and never let them know that they stop of their own accord.

Never hurry a fickle horse, young or old. Slack up or lay down your reins, and wait patiently fifteen minutes; then start quickly, and so manage until entirely cured, which will seldom fail.

Colts, after driving, should be cleansed and rubbed thoroughly before entirely cool; this will prevent soreness, wind-galls, &c.

When thoroughly trained to the harness, then break to ride. This should be done by one hand —good bridle, martingals, girth drawn tight—get on, and stick. If well trained to the bit and harness, there will be no difficulty in breaking to ride.

As this is my first essay on horse-breaking, I think I will stop here for the present.

Yours truly, E. C.

—*Michigan Farmer.*

☞Weigh every step that you are about to take, whenever passions become involved. How often do things assume a different aspect, when they are fairly considered.

THE AIR IN AGRICULTURE AND FOR ANIMAL LIFE.

Now, I must not forget that I ought to be referring more especially to the fact that all people and all living animals are loading the air with the poisonous gas which comes up through the windpipe chimney, from the furnaces burning inside them.—But let us still further digress for one minute, just to point out the fact which thus appears, that a large portion of the food an animal eats is in reality wasted—spent as fuel—burned up within it, just to maintain its bodily heat. And the farmer might take a hint from that; of course, if his feeding cattle or sheep are exposed to cold and rain, they will need burn more fuel to keep the heat of life within them. Keep them warm artificially, and less of the turnip and hay which they eat will be burned up within them; keep them quiet in stalls or boxes, instead of in yards or fields, where they can run about, and the bellows will not work so actively, and the fire will not burn so fiercely in their lungs, and less of the food will be spent in the mere act of burning as fuel—more will be available for the purpose for which food is given; that is, for the formation of fat and the promotion of growth. It is not unfrequently the case that a lot of sheep, folded out in cold weather on the turnip field, gain no flesh at all. The fact is, every bit of food that is eaten by them is burned up within them just to preserve animal heat, and the farmer might just as well have thrown it all into the fire at once; but house those sheep, or feed them in sheltered yards, where they lose heat less rapidly, they will not need so much fuel to keep themselves comfortable, and some of their food will form flesh.

Now let us return to the fact that the air is being poisoned by all this breathing and fire-burning. You will find that a very little breathing through some lime water will make it muddy enough, proving how much more carbonic acid, and how much less oxygen, there is in the air that is breathed in. The fact is, the air we breathe out contains 100 times more carbonic acid than the air we breathe in. A man, by the union of the air he breathes in with the carbon of his food in his lungs, throws out in his breath in this way, in the course of a year, about 1-2 cwt. of charcoal; as much, perhaps, as there is in a sack of coals. Indeed, the quantity of carbon or charcoal thus added to the air every year by the breath of all the animals, human or otherwise, in Great Britain, is estimated at 2,000,-tons' weight.

Well, then, the air would very soon become unfit for man and other animals to live in, were it not for the beautiful arrangement of carbonic acid gas, being sent into the air, that plants remove it. As fast as charcoal in fires and candles and in food is uniting with the health-giving oxygen of the air, and forming the deadly gas, the plants are decomposing its carbonic acid, and taking the charcoal forming their own selves out of it, and giving back the health-giving oxygen pure to the air again; so that thus the air is maintained fit for use. It is only in the daylight, or sunshine, that plants have this power, however, and you know that if you want to blanch a plant, a rhubarb plant for instance; that is, hinder it from becoming woody, or hinder it from decomposing the carbonic acid of the air, and so obtaining charcoal to form wood, all that you have to do is to keep it from the light. And again, if wheat is too thick and luxuriant in spring

time, so as to hinder the light from getting in upon its stems, those stems will be unable to decompose the carbonic acid of the air; they will be unable to procure charcoal to make them hard and woody; they will be white and succulent, without strength, and liable to be laid by the rain; but mow those top leaves off, or let a lot of sheep bite them off, and you let the light in upon those stems, and they will regain the power they have lost, and they will strengthen and harden in consequence of again being able to procure their woody substance from the air. But that they can decompose the carbonic acid of the air, and, retaining its charcoal, give off the pure healthy oxygen, can be proved. I have taken a number of cabbages, one after another, on successive days, cutting them about mid-day, when they might be supposed to be full of the gas, if ever they took any at all, and exposed them under water to the sun. Very soon, bubbles of gas collected in the top of the glass, and on examination it was proved, by their ability to burn things brilliantly, that they were pure oxygen. Those cabbages had been collecting the deadly gas as I and you were breathing it out, and as every chimney over a fire was sending it into the air, and they were decomposing it and sending the healthful part of it back to the air and keeping the charcoal to themselves. See, then, how important the air is to plants, as well as to us; it provides them with all the woody part of their substance; it provides us with the breath we live upon, and the fires that warm us. See how important the process of combustion, whether slow as in the case of ordinary decomposition, or more rapid as in the case of respiration and ordinary burning, is to plants. Unless, in this manner, the air was continually supplied with this poisonous gas, plants might exhaust it of all the materials on which they feed and live. See how important plants are to us; they keep the air healthy for us, deprive it of those noxious gases which would otherwise soon collect and destroy us, forming their own substance at the expense of our enemy; so that every thing which would destroy us is made to provide us with food and with fuel through their means. See, too, how admirably the growth of evil, in the natural as well as in the moral world, is checked and made productive of good in the end, by the overruling hand of God's Providence.

Thus much, then, we have learned regarding the air in connection with agriculture; it provides the plant with its woody substance; it keeps up the warmth of the living animal by burning a portion of its food in its lungs.—*Ag. Gaz.*

CHLOROFORM WITH HORSES.

The Veterinary Record contains an article on the use of chloroform in the castration of colts. The action of it, as an anæsthetic agent, is pronounced so uncertain as to render it of little value. The writer says:

From what we have seen of the employment of this agent, we may remark that our experience corroborates the accounts before given as to the uncertainty or irregularity of its operation. Even provided that its mode of being administered is always the same, there is a great difference in the manner and time of various horses becoming effected with it, and we cannot beforehand tell upon which animals it will produce a favorable or unfavorable influence. And, again, in some cases it will operate so fully and efficaciously as an anæsthetic, that a horse under its action, though subjected to painful operations, may not for a while need the usual securing by ropes and hobbles in order to restrain his struggles; yet, almost in a moment, and without warning, the animal will sometimes begin to writhe and dash about with the greatest violence. If chloroform uniformly produced complete stillness and insensibility, and if it acted with a like certainty in every case when given to the horse, it would be an agent worthy of every dependence; but so long as it remains unequal in its operations, we cannot rely on it as calculated to supplant the hobble and ropes usually employed during the performance of operations to ensure safety of the horse, operator, and attendants.

RESULTS OF APPLICATION.

Many curious illustrations are found in literary biography of what resolution and application may accomplish, in the way of intellectual progress.—One of the most remarkable cases of the kind is that of Anthony Purver, an Englishman, who had been brought up as a shoe-maker, with no education, except a very slender knowledge of his native tongue. Purver was a Quaker, of a serious turn of mind, and after much reflection he resolved to examine the religious principles which he had imbibed in his youth, and in the course of his inquiries found himself much embarrassed by the different translations and explanations of the scripture. This determined him, though late in life, to study the original languages. He began with Hebrew, and in a very moderate compass of time made himself a competent master of that and other oriental languages, which are most useful to a critical knowledge of the scriptures. He afterwards learned Greek, and at last Latin, and finally undertook the Herculean task of making a new and literal translation of all the books of the old and new testament, with notes critical and explanatory, which was published in two volumes, folio, in 1765—the fruit of thirty years' laborious application. He was aided by an excellent memory, but the resolute and persevering manner in which he applied himself to his literary labors is none the less commendable.

PRESERVING CORN FROM WORMS.

In the spring of 1847 we ploughed up one acre in a corner of a six acre meadow, which had been several years in grass, and the whole of which was much infested with cut-worms and the yellow wire worm. The acre was planted with corn, and totally destroyed by the worms. Late the ensuing fall, the whole field was manured and turned over smoothly; the spring of 1848 the whole was sown with barley, which was very much injured by the worms—in many places entirely destroyed. In September, it was sown with wheat with the same result as with barley. In the spring of 1850, we manured it well with fresh barnyard manure, turned under; harrowed and marked three feet and a half apart by two and a half, and planted corn, four grains in a hill, the first of June. It came up in five to seven days, and is now a very promising piece, as forward as any planted in the middle of May.

The seed was soaked in a decoction of a pound of

tobacco in four gallons of water. There were plenty of worms in the ground, as I found in planting and hoeing; but they would not touch the tobacco-scented corn, while there was not a single weed to be found; and indeed they did no small benefit in destroying the grass and weeds. The field was kept as clean of everything but corn as it well could be. At the first hoeing I observed a large mullen plant, the leaves of which were eaten through like a riddle, and upon digging around it I found over 20 cut-worms.

Prof. Mapes, in the May number of the Working Farmer, has a paragraph on this subject. He speaks of this and other steeps for seed—says that a solution of carbonate ammonia adds to the productiveness of the crop, remarking in conclusion:

"But for the removal of cut-worms, and indeed all other worms from the soil, we would recommend the application of six bushels of common salt to the acre, one week or more before planting, leaving the dews of two or three evenings to dissolve and carry the salt into the soil. Unless the soil is surcharged with chlorine and soda, which is seldom or never the case, common salt can be applied with profit not only for the purpose of destroying insects and a large class of weeds, but to supply chlorine and soda for the use of plants."—*Albany Cultivator.*

OAT MEAL.

Most of our readers are probably aware that in Scotland, and some parts of England and Ireland, oat meal is extensively used as food, and is considered peculiarly nourishing; but they are *not* aware how this meal is prepared. Oats grown on light, loamy soil, are the best for the purpose, and they should be as nearly of equal size as possible. Before grinding, they must be kiln dried, and for this purpose, when done on a large scale, a cast iron floor, pierced with numerous small holes, and placed many feet above the fire, is used. On this the oats are placed, and they must be turned several times before the moisture they contain is evaporated. There is a fraudulent trick of scattering sulphur among them at this time, to give them a peculiar bright color. When they are cold, the next process is to shell them, which is done between stones, usually five feet in diameter, free inside the eye, perfectly straight on the face, and capable of making 700 revolutions in a minute. *Freestone*, or sandstone, is considered best for the purpose. The oats then pass along a dust sieve, into the fans, which separate the seeds and small grains from the good quality, which is removed, either by elevators, or by hand, into the hopper of the grind-stones. These stones should be five feet in diameter, peon inside the eye, straight on the face, but never grooved like those for grinding wheat. They should make 300 revolutions a minute. A sieve is suspended under the eye, which completely separates the meal from the seeds. To preserve it, it should be tread very hard into a large chest, to exclude the air, and thus packed is said to increase in weight. It is chiefly cooked by boiling, not being adhesive like wheat flour; and thus prepared, is known as "*hasty pudding*," "*stir-a-bout*," and "*crawdy*" when the skimming of boiled beef is added; but it is also made into thin sheets or cakes, dried on a line. C. F.

Michigan Farmer.

COOKING FOOD FOR STOCK.

We learn by the Bangor Courier, that Captain Martin Mower, one of the scientific farmers of that city, has set up a steaming apparatus in his stables, and has commenced cooking roots, hay, and all the other vegetable matter which he uses as food for his neat stock. His experiments are said to be highly satisfactory and advantageous. The cost of the apparatus is not great, and we should think it could be constructed in so simple a manner as to be used with profit by almost every person who winters stocks. Capt. M. causes all the food of his animals to be thoroughly cooked, and he is satisfied that the additional nutriment which they receive more than repays him for the extra trouble and expense of cooking. We think the idea of cooking food for stock is a good one, and that farmers generally would be benefitted by practicing it much more extensively than they now do. —*Maine Farmer.*

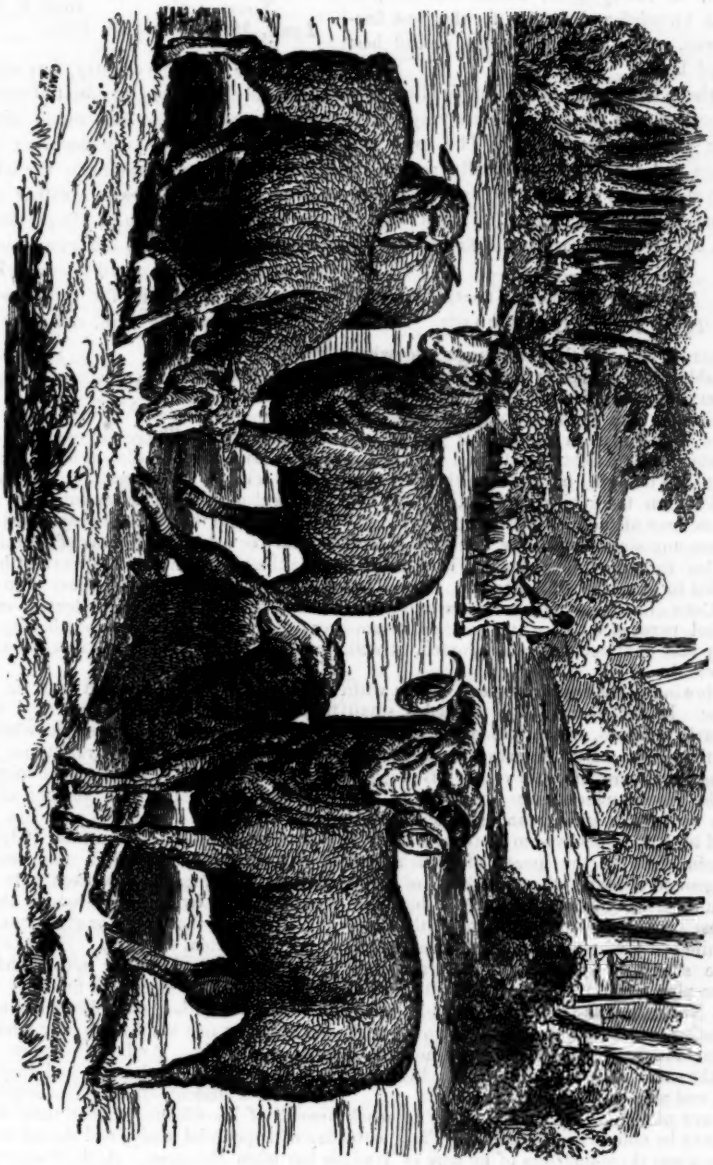
IMPROVEMENT IN COTTON SPINNING MACHINERY.

Mr. W. Rouse, of Taunton, Mass., for whom we recently had the pleasure of securing a patent in spinning machinery, has made two other valuable improvements, for which he has taken measures to secure a patent. The improvements consist in regulating the draught of the thread between the ring guide and the traveller of the bobbin; and an improved method of letting the ring rail descend suddenly to lay the binding thread on the cope. This last is an improvement in the mechanism for which he previously secured a patent. The regulation of the draught on the thread is done by a movable guide ring which maintain an equal distance from the ring rail as it moves up and down, and thus keeps the thread at the same angle always with the traveller, laying the threads in a most equal and beautiful manner, forming a cope of the first quality, and preventing much breakage of yarn.—*Scientific American.*

A HINT TO BORROWERS.

A correspondent of the Boston Post relates the following anecdote of Robert G. Shaw, one of our merchant princes:—

We have an anecdote to tell about Mr. Shaw, which was never before in print, and which, we think, will amuse our mercantile readers, and not give offence to our venerable friend. We happened to be present when the occurrence took place. A gentleman met him in the street, and, upon a brief conversation, asked him to lend him ten dollars, as he was short—not an uncommon thing for him, at the time. It was many months ago. Mr. S., raising his spectacles, replied—"Yes, sir, with pleasure, on one condition." "What is that, sir!" "Why, that when we next meet, you will turn your face toward me, look pleasant, and not turn it away! I lent Mr. —— a small sum of money about a month ago, and ever since that time he has cut me, most decidedly. Meet him where I will, on State Street, Commercial Street, or in the Exchange, and he always turns his head away.—When I lend a man money, and he is owing me, I want him to look me full in the face, as though nothing had happened. And then I shall be willing to lend him again." This is a veritable story.



GROUP OF JEWETT'S MERINO SHEEP.

JEWETT'S MERINO SHEEP.

This group of sheep represents a lot bred by Solomon W. Jewett, Esq., of Weybridge, Vt., sired by his premium buck Fortune. They were exhibited at the fair of the American Institute, in October, 1849, by Messrs. Cullen and George W. Capeheart, of Merry Hill, North Carolina, to whom was awarded a silver cup for the best fine-wooled ewes, and a diploma for the second best fine-wooled buck.

These sheep are distinguished for yielding very heavy fleeces of fine wool. They are very hardy, possessing strong constitutions. The ewes are good nurses and the lambs are easily reared, as they come strong and are protected by a thick covering of hair and fur, which in a few months gives place to a soft, compact covering of fine wool.

For the New England Farmer.

THE POTATO DISEASE.

Mr. Editor:—One of the first things I do when your valuable paper comes to hand, is to look for remarks on the potato disease. Having tried various experiments with potatoes a year or two since, in England, I felt anxious to know if any person on this side of the Atlantic had tried similar experiments; and though I have met with many valuable articles on the subject, my anxiety was not lessened, as none of the modes of treatment recommended bore any similarity to the method adopted by me. But through your paper of May 10th, I am gratified to learn that Mr. Leonard Loomis, of Tolland, Conn., has tried the same means with success. I feel persuaded that if the method recommended by that gentleman can be adopted, it will prove effectual.

The following is the course persued by me with its results: In the year 1847 I planted a small patch of early potatoes, which, when dug up, were three-fourths rotten. But the man who dug them, considering they were of little value, left a great many in the ground which I was not aware of, till they came up in the spring; and as they looked strong and healthy, I resolved to let them stand. I dug between them in the month of March, and filled the ground out with the same kind of potatoes. But what was my surprise when I dug them to find those I planted considerably more than half rotten, while those which were left in the ground were quite sound. I immediately determined to try autumn planting. I prepared a small piece of ground in November, and planted a certain number of rows, being particular to mark the rows with sticks. In January, I planted the same number of rows, of the same kind, adjoining them. In March the same, and also the first week in May.

I was very particular at each planting to mark them so as to be able to see the effect. They were planted on about three-quarters of an acre of land, and were all dug in one week, and the following was the result:

Those planted in November were dug first, and I do not think there was a diseased potato among them.

Of those planted in January, but very few indeed were rotten.

Of those planted in March, more than half were rotten, and a great many of those which appeared sound when dug, rotted afterwards.

Of those planted in May, scarce a sound potato could be found.

I do not know whether such a method can be universally adopted in this country, as I fear the frost would destroy them; but if it could I am satisfied it would be crowned with success.

Yours, truly, John E. Stewart.

Lynn, Mass., May 28th, 1851.

Remarks.—In this country, our winters are too severe and changeable, to admit of autumnal planting of potatoes. The frost would usually destroy them, unless planted very deep, or protected by covering. In some seasons in the interior of the country, where changes in weather are less frequent than near the sea, a deep snow comes early in the season, before the ground is deeply frozen, and it remains on all winter. In such cases potatoes keep well in the ground where raised. But these cases are rare, and none can foresee them.—*Editor.*

For the New England Farmer.

STUDY AND LABOR.

Mr. Editor:—There are many who have a disposition to study, in order to be informed in relation to science and literature, but who, because they have not the necessary funds to enable them to prosecute their studies systematically at an academy or other institutions of learning, and because they are compelled to work at least a part of the time in order to "support nature"—console themselves in their non-intellectual career by the very plausible excuse that they belong to that "*unfortunate*" class who must labor for a living, and, of course, cannot study.

Now let us for a moment look at the case of those who would study as they say, if they were only able to do so, and ascertain whether, if their desire for education was in reality as great as for money, they could not gain a sufficient time from their labor to obtain the amount of knowledge necessary for most practical purposes.

It is said by those upon whose judgment we can rely in these matters, that a man can perform as much by working on an average only ten hours a day, as he can by working longer than that, and physicians say that seven or eight hours in twenty-four are sufficient for sleep. Such being the case, and allowing one hour for meals and taking the larger number for sleep, we find that there would be only nineteen hours employed out of the twenty-four, leaving five hours each day which might be devoted to study. And furthermore teachers say that six hours of the hardest and deepest study are better for a student—that he can acquire a greater amount of knowledge in that time than a whole day of superficial study, and *dozing* over books, as is too often the case. And, moreover, there are few who can endure that kind of study in which all the faculties of the mind are concentrated, (and this is the kind of study in which a person should engage, if he would be improved the most in the shortest time,) for a longer time than six hours out of twenty-four.

Thus it may be seen that the laboring man, as regards the acquisition of knowledge, has almost

as good advantages as the man whose whole employment is study—if he was but aware of the fact, and would improve his opportunities.

Let any one who reads this, if he doubts the truth of my proposition, that a man can do as much work as another who does nothing except work, and at the same time acquire nearly as great an amount of knowledge as one whose whole business is study,—enter on this plan for a few days, let him in the morning study two hours, not superficially, but "*toto corpore*," as if life or death depended upon his exertions, and when the two hours have passed, he will *feel* that his mental powers are somewhat weakened, and that his interest in his theme of study has in a measure subsided, and hence he will not be in a proper state of mind to acquire and retain knowledge; but he will enter his field of labor with renewed vigor; so when the muscles brought into exercise by labor, are exhausted, his mind will be free to commence anew his intellectual toil.

Thus while his body is resting, and renewing its strength, he can improve his mind, and conversely while the mind is resting he can be useful by means of manual labor.

Thus also even a liberal education might be acquired by many, while they not only would not be spending money, but they would actually be gaining in the same, thus laying up property for a "*rainy day*," and gaining mental property such as will prepare one not only for a greater amount of pleasure than he would otherwise be able to enjoy, but also for usefulness. Who will avail themselves of this golden opportunity? D.

REMARKS.—In considering the subject introduced by our correspondent, a very important fact presents itself, which is that the student or literary man needs at least five hours per day for exercise, which should be brisk and as severe as would be produced by half a day of common labor. This is essential to the preservation of health and a sound constitution. This being the case, he may as well attend to labor as amusement for exercise; and generally better, for when one is pursuing labor with interest, he takes exercise without thinking of it; but when he exerts himself purposely for exercise, he often does it reluctantly, and frequently grows indolent and neglects it.

Again, the man whose principal business is labor can perform a good day's work in ten hours, and his body must have rest, and while that is resting, his mind may be at work, and without any disadvantage to his physical frame. Ten hours for manual labor, five for study, two for meals and recreation, and seven for sleep and rest, which is enough in all conscience for any one to sleep, excepting children. In this case, with all reasonable time for every other purpose, the laborer has five hours for close study, and besides this he may while laboring con over his studies, and thus greatly aid his progress.

We have known laborers who attended to their work the usual number of hours, and with as much diligence and success as their associates; and yet they attended to studies, or wrote books or articles for periodicals with as much progress and good success as those who gave their whole attention to these pursuits.—EDITOR.

MEMOIR OF COL. TIMOTHY PICKERING.

John W. Proctor, Esq., President of Essex Agricultural Society, has communicated to the Albany Cultivator a very interesting memoir of this distinguished patron of agriculture, including his political career. As Col. Pickering was among the most zealous and efficient promoters of agricultural improvements in his day, we select that part of the memoir relating to agriculture, believing that it will be perused with interest, and afford a worthy example to those who are able and disposed to do likewise. Col. Pickering was born in Salem, July 17th, 1745. He died at Salem, January 29, 1829, in his 84th year. We copy from the memoir.

It is of Col. Pickering *as a farmer* that we feel it to be our privilege to speak. This we should not have done, had not our solicitations to others, better qualified to say what ought to be said, been ineffectual.

In 1818, an association of the farmers of Essex was formed, under the name of the "Essex County Agricultural Society," over which he was invited to preside. It was done in accordance with the offer of the State for the encouragement of such societies. There is good reason to believe that Col. P. was not ignorant of the movement that prompted these offers. Whatever may have been the origin, it met his entire approbation and active co-operation. He continued thus to preside for a period of *ten years*, until the autumn of 1828, when he said he felt it to be his duty to withdraw, lest he should be thought to be *in his dotage*—an idea that never occurred to any one but himself. We know not how to express our opinion of the efforts of Col. Pickering, in connection with this society, better than in the language of the address, in 1844. Says the speaker—"I have ever esteemed the hints and observations that fell from Col. Pickering at our meetings, as among the most valuable lessons ever taught to the farmers of Essex. At an age when most men think their labors should be ended, he was in his prime, in handling the plough and instituting new experiments. He was not ashamed to soil his hands or his clothes, in the labors of the field. In whatever he engaged, he took the part of the working man. When he spoke, it was not to display his own acquirements, but to instruct his hearers. While others were admiring his superior wisdom, he, himself, appeared to be the only one not conscious of it. Like Franklin, he always had some illustrations that would not fail to make a lasting impression."

During his presidency, (as it was our privilege to be his secretary,) we can bear testimony that he was scrupulously attentive to all the meetings and interests of the trustees, and of the society; always ready to illustrate by precept and example his accumulated experience. He loved farming for its own sake, and for the good of his fellow-men. He was never happier than when he commanded the listening attention of a group of practical far-

mers, catching the words of wisdom from his lips, spoken, as it were, from the inspiration of the genius of sound philosophy. We recollect many instances, when, upon questions incidentally arising, he would go and talk "like a book," for fifteen or twenty minutes, to the admiration of all around. He had read most that was then valuable of English, Scotch and Flemish husbandry; his memory was uncommonly retentive; and what was of most value, he thought closely and carefully upon what he saw and read. He was never satisfied to take any man's *say so*, unless he could be made to understand the reason for saying it.

It may be interesting to notice some of the topics on which he was accustomed to dwell with special emphasis, connected with the advancement of husbandry in New England. Among these, the improvement of our native breed of neat cattle is entitled to the first place. "I have long entertained," said he, "and repeatedly expressed the opinion, that a fine breed of cattle, peculiarly adapted to the combined objects of the farmers of New England, might be most readily and extensively obtained, by the spirited exertions of substantial farmers to improve our native breed." In support of this opinion, he quoted the late Mr. Lowell, of Roxbury, one of the most intelligent farmers in Massachusetts, who said, "Possessing as we unquestionably do, the materials among our own stock of improving our breeds, by careful selection, we should follow the example of Bakewell and other British farmers, who in fifty years have raised the stock of Great Britain to a state of perfection little short of what it is supposed they can ever reach." And again, "more is to be expected from the excited attention to the improvement of our own stock, than from importation." Col. Pickering further remarks, with a liberality of opinion characteristic of himself, "Such improvements of our native cattle, so important to our farmers in general, will also be interesting to those who are possessed of fine imported cattle; for if the latter on full trial shall be found to be really of greatly superior excellence, improved individuals of our native breed will furnish better subjects for coupling with them; and enable the owners of the imported animals more expeditiously to improve and increase a superior stock,—whether for their own use, or for sale."

A highly interesting discussion on this subject was carried on between Col. Powell, of Philadelphia, and Col. Pickering, (see N. E. Farmer for year 1825) in which Col. Powell admits, that the short-horns, so called, are too large for the ordinary purposes of our farms. To whom Col. Pickering replies, "We now have, in what are denominated our native cattle, a breed exactly adapted to our service, and means of keeping them; and may we not, with spirit and resolution, engage at once in the laudable and profitable enterprise of improving this breed, by a careful selection of the best males and females, and thus, in a few generations, raise them, not to gigantic size, but to a high pitch of perfection, for the primary objects of our farmers,--*labor, beef, and rich milk for butter and cheese.*"

The constituents of soils, and the manures applicable to their improvement, were also, with him, favorite themes for discussion. His remarks were practical, not theoretical. He would go on, with great minuteness, stating all the facts and circumstances connected with any experiment, explaining as he went, but never was in haste to draw general conclusions—fully impressed with the truth of the proverb—"one swallow does not make it summer."

The implements of husbandry, too, shared a portion of his attention. From the noble plough, that is at the foundation of all culture, to the simple brush for the destruction of the meanest insect—none were too large to be above his comprehension; none too small to be beneath his notice. Scarcely a subject can be mentioned, connected with the culture of the soil, that has not been noticed by him. Without presuming to be a writer and maker of books, he was always thinking—always communicating his thoughts in such a manner as to be useful. In so doing he seemed to forget himself, and to be moved by a desire to do good. His life was a practical illustration of disinterested benevolence. We remember to have heard from him addresses to the Essex Society in 1818, 1820 and 1828, and to the Massachusetts Society in 1823, all of which were published among the transactions of those years.

There is scarcely a page of the publications of the Essex Society, during his presidency, that is not illuminated by his reflections. If this society has gained any reputation, or been instrumental of any good, it is mainly to be attributed to the impulse he gave it, and to the spirit of inquiry awakened by his advice and exertions. To attempt to condense his remarks, would be but to mar their symmetry, and impair their force. His discriminating observation and comprehensive reflection, left nothing to be added; his classic discipline and fine taste, admit of no retrenchment. We cannot so well express what is proper to be said of his productions, as in the following condensed paragraph of Mr. Fessenden, the learned editor of the N. E. Farmer, when speaking of the address to the Mass. Soc., vol. 1, p. 222. "Although the subjects of the address are not only important, but many of them abstruse, forming what may be styled the metaphysics of chemistry and physiology, still there appears to be nothing in Mr. Pickering's observations which is hard to be understood. Volumes after volumes have been written on the food of plants; the elements, or chemical constituents of vegetables; the mode of operation, the manner of applying, and the benefits resulting from the application of lime; the different kinds of earth necessary to constitute fertile soils; the burning of clay for manure; the obstacles which prejudice, and a pertinacious adherence to old usages, oppose to improvements in agriculture; and the best means of overcoming such obstacles; the best methods of accumulating and applying manure, &c., &c.—but we do not remember ever to have seen so many and so important topics comprehended in even more than double the pages containing Mr. Pickering's remarks on those subjects. We never read a paper, which, in our opinion, exhibits so much *useful matter* in so *short a compass.*" "We think it should be a subject of congratulation with every friend to his country, that an eminent statesman, and revolutionary patriot, should be induced to exert his influence, and devote his talents to promote the interests of agriculture, the most noble of the sciences, as well as the most useful of the arts." If further testimony is demanded, let the pages themselves be consulted; and whoso shall fail to be convinced, will thereby demonstrate his inability to comprehend.

If we rightly remember, as early as 1790–5, was the attention of Jefferson and Pickering directed to the formation of the mould-board of the plough, on scientific principles. They thought much and compared their views. Which originated most improvement we will not presume to say. Their object was not so much to secure patents, as to secure improvements. The result was the publication of a new form of structure, with an explanation of the principle of operation. In 1803, Mr. Smith, of Pennsylvania, substituted the *cast iron* for the *wooden mould-board*. Since then a very great variety of modifications and combinations, (too numerous to mention,) some founded on *principles tangible*, and others on *principles imaginary*, have been brought forward. But if we do not mistake, nearly all that is valuable in these improvements was embraced in the contemplations of these original minds. By so doing, they literally converted the weapons they had so successfully wielded into ploughshares—benefiting the world more than any victories at arms.

Col. Pickering's mind was so disciplined to accuracy of thought and logical conclusions, that he could not endure with patience the ill-founded notions and whims that frequently have a pervading influence on many minds in the community. Illustrative of this, we remember an incident that occurred at one of the meetings of the board of trustees, over which he presided. One of the members of the board, a practical farmer possessed of more *acres* than *ideas*, had been discoursing, with more ardor than discrimination, *upon the proper age of the moon, in which bushes should be mown, that they might not spread again;* and had specified a certain day of the *first* or *last* quarter, (we do not remember which,) in the month of August, *provided* the moon should be in the right sign, with her horns in right position, &c., &c. The speaker having triumphantly put forth his theory, confirmed by observations for a time the memory of man runneth not to the contrary, calmly waited for others to say amen! "My friends," says the Colonel, "I hope never again to hear from you, or any other member of this board, anything whatever of the influence of the moon, upon any of the operations in agriculture. I should as soon think of calling in the aid of '*the Man in the Moon*,' to assist in the labors of the field—be they chopping, ploughing, sowing, mowing, hoeing, harvesting, or whatever they may be, as to expect any favorable or unfavorable influences, from the *age or position of the moon*. Let me tell you, *that old man*, pictured in the Farmer's Almanac, surrounded with the twelve signs, and as many jaw cracking names, and pierced by as many arrows, has done more harm than all the meteorological prognostications of the most weather-wise calculators have ever done good. I want such rules only, for labor, in the operations on the farm, as are supported by reason, and are in harmony with common sense." It is unnecessary to say that the gentleman's argument was never again urged in the presence of the president.

Potatoes.—Experiments as to proper depth to plant—Mr. John Thompson, made an experiment to ascertain the best depth at which potatoes should be planted. The seed was planted in trenched ground at depth of 3, 6, 9, and 12 inches. Those produced at 12 inches were few and small; those at 9 and 3 inches were of equal quantity and those at 6 inches, much the most numerous and largest. The *deeper* the potatoes were planted, the *more mealy* and finer was the quality.—*N. Y. Transactions.*

WILD FLOWERS.

How beautiful is the exquisite native grace of the flowers, seen in all their habits and positions! They know nothing of vanity, its trivial toils and triumphs! In unconscious, spontaneous beauty, they live their joy-giving lives, and yet how all but impossible to man to add to their perfection in a single point! In their habits of growth, the innate grace may be particularly observed; there is a unity, a fitness, in the individual character of each plant to be traced most closely, not only in form, or leaf, and stem, but also in the position it chooses, and all the various accessaries of its brief existence. It is this that gives to the field and wood flowers a charm beyond those of the garden. Pass through the richest and most brilliant paterre in the country, with every advantage which labor, expense, science and thought can bestow, and you will find there no one plant that is not shorn of some portion of its native grace, a penalty which it pays for the honors of culture. They are richer perhaps, more gorgeous, the effect of the whole is more striking, but singly, they are not so wholly beautiful. Go out in the months of May and June into the nearest fields and groves, and you shall see there a thousand sweet plants, sowed by the gracious hand of Providence, blooming amid the common grass, in crevices of rude rocks, beside the trickling springs, upon rough and shaggy banks, with a freedom and simple modest grace which must be the despair of gardeners, since quite inimitable by art, with all its cunning.

THE WHEAT CROP OF OHIO.

The Cincinnati Nonpariel says: "It is estimated upon a careful examination of the matter, that the wheat crop of Ohio, for the year 1850, will amount to about thirty millions of bushels. The population of Ohio is 1,981,040. Each inhabitant will consume one barrel of flour, or four and a half bushels of wheat. It will require 8,918,730 bushels to feed its own population, and leave for sale 21,081,270. When wheat commands 75 cents in the Lake ports, it netts the farmer 65 cents; the other 10 cents is paid for transportation and commission. The surplus wheat will put into the pockets of its farmers $13,702,825, and to the State $15,810,952. There had been sold, previous to the first of January 1851, 4,442,571 bushels, which with the full amount required to feed its population, 8,929,736 bushels, left on hand at that time for sale 16,638,997 bushels. The surplus wheat and corn crops of Ohio of the last year are sufficient to redeem every dollar of her State indebtedness."

Ashes to Prevent Bad Odors.—Wood coal, or half burnt peat, or ashes thrown occasionally into privies, destroys the bad smell, and renders them susceptible of being cleaned out and used as a manure (and none more valuable can be obtained) without being attended with any disagreeable smell—and producing a benefit to health, and comfort and wealth of community.

THE UTILITY OF LEAVES.

Every person conversant with vegetable philosophy is aware that the all important requisite in the growth of fine fruit is a good supply of big, vigorous, healthy leaves. A tree which is kept defoliated for a single season must die; and fruit growing upon branches which are deprived of their leaves cannot ripen—examples of which are furnished by the instant cessation of growth and ripening of fruit on trees which become stripped by leaf blight. In one instant, a dense mass of plums remained half grown and flavorless for several weeks in consequence of the permature dropping of the foliage—a second crop of leaves, three weeks afterwards, effected the completion of their growth and their ripening to honied sweetness. The editor of the Michigan Farmer mentions the following interesting case, illustrating the same principle: Mr. More, of Detroit, has a magnificent grape vine, spreading itself over one side of his house, which was in September richly laden with fruit. After the clusters were formed, a cow entered the enclosure, ate the leaves entirely, but left the fruit untouched. The consequence was that upon that portion of the vine which was beyond the reach of the animal, there never were finer clusters, while upon the portion from which the leaves were removed, the clusters dwindled away, and have come to nothing; and that, too, up to the very line of separation between the mutilated and unmutilated portions.

Mechanics' Department, Arts, &c.

HORSE SHOEING.

The following exceedingly sensible remarks are from the pen of Mr. Miles, veterinary surgeon to the Queen of England's Life Guards, and author of several valuable veterinary works. We commend them most particularly to the notice of every person who has that valuable, and almost indispensable animal, the horse, in his charge.

"The shoes of the horse should be of equal thickness throughout, with a flat ground surface, as those with high heels, which asinine smiths make in imitation of their own, are dangerously absurd. The toe, which ought to be raised, is thus lowered, and nature's plan reversed, which elevates the point in order to avoid obstructions. The web should be wide, and of the same width throughout, instead of being pinched in, because the vulcan operator likes to see the shoe well set off at the heels. This is both unphilosophical and detrimental; it deceives the eye of man, and injures the foot of the horse. The *outer* edge of the foot rests on the inner edge of the shoe, and the remaining width of the web projects beyond the hoof; so that the master who thinks his horse has a good open foot, only has to be proud of a bad open shoe, which both conceals deformities underneath, and invites with open arms a bad road to come and do its worst. The heels are made bare just where the navicular joint is most exposed; and if that be inflamed, what must the agony be when the unprotected foot treads on a sharp flint? The horse falls suddenly lame, or drops as if he had been shot—phrases in much too common use to require explanation; and small is the pity which the suffering animal meets with from man, who, having first destroyed the use of his victim's feet, abuses him because he cannot go; and imputes 'grogginess' to him as a crime, as if he were in liquor like a groom, and not in agony."
—*American Agriculturist.*

TO DYE IVORY.

In many branches of business it is very desirable to know how to color ivory. The red balls of the billiard table, and the red colored chessmen, are evidences that the art of coloring ivory is known to many, but the number is not numerous, and we have not been able to find anything said, satisfactorily, on the subject, in any printed work. The Chinese appear to be the most eminent in making fancy ivory articles, and they color them with great taste, but red appears to be the only color for which they are distinguished, and it is the predominant one—the red and white forming the varieties. We have had our attention called to the subject lately, and we present the following as the result of experiments:—

Red Color.—The hands should be washed in soap and water to free them from any grease that may be on them; the ivory should be washed in some cold strong soap suds, and then well rinsed in cold water. A clean copper or brass dipper, or any small copper vessel, filled with soft water, should be placed on a fire and kept boiling, with some ground cochineal, for about ten minutes, (about two tea-spoonsful of the cochineal will dye three billard balls.) After it has been boiled for this length of time, add a pinch of cream of tartar, between the fingers, and six drops of the muriate of tin, (if the tin cannot be obtained a little alum will answer;) this is all stirred about and the ivory put in. After the ivory has boiled about one minute, it is taken out and dipped in a vessel of clean cold water, and then put into the boiling cochineal for the same length of time and taken out again. It is thus dipped in and taken out of the boiling cochineal, until it attains a beautiful red color, when it is well washed in warm water, and rubbed over with a white cloth which has been lightly greased. Care must be taken not to use too much cream of tartar or the chloride of tin, for these substances injure the surface of the ivory.—Those who do not care about the price of the cochineal, may use four tea-spoonsful, and the ivory will be colored quicker. The greater the amount of dye stuff used the deeper will be the color.

Black.—For this color the ivory should be cleansed the same as for red. An iron or tin vessel may be used to dye this color. Take about four ounces of ground logwood, and boil it for fifteen minutes, then add one-fourth of an ounce of copperas, and put in the ivory and boil it gently for about ten minutes, when it may be taken out and washed. If the color appears slaty (light,) more logwood should be added, and the ivory boiled some time longer. The ivory can also be dyed black by boiling it for about ten minutes in the same quantity of copperas as that mentioned, and a little of the bichromate of potash, then airing the ivory and boiling it in the logwood afterwards. When the color is deep enough it must be washed and rubbed with a greasy cloth, when it will appear jet black.

These two colors are the most common in ivory articles, especially the red. Ivory is bleached white by exposing it to the sun, after being washed

in soap suds and moistened from time to time, with clean soft water. A little whiting and soap, used together, is a good composition for cleaning the ivory handles of knives. We may refer, at some other time, to the mode of dyeing other colors on ivory.—*Scientific American.*

FIRE-PLACES.

In the construction of these there is, especially in cities, a great want of judgment. There are several points to be considered: neatness, or beauty, economy and comfort. In building a house, undoubtedly the first consideration should be comfort, the second economy, whether we build for ourselves or rent to others. We regret to say that there seems to be an utter disregard of these in nearly all the houses in the city, and too many in the country pattern after our city fashionables.—Small fire-places are all the rage; a little square, deep, low, narrow hole in the wall, hemmed in on all sides with iron casements, is all that is left to be called a fire-place: the result is, 1st,—the heat is thrown into the room in a straight line agreeing to the width of the opening, and those only who sit immediately in front of the 8 by 10 opening get the benefit of the fire on one side, while those who sit right and left might as well be in some other place. 2nd—an insufficient quantity of heat to warm the room is thrown out. One-half or two-thirds passing up the chimney, to the disadvantage of comfort and economy.

The next question is, how should they be built? Answer:—high, wide, and deep, so as to admit of filling in with a circular back wall, presenting a large opening and surface from which to reflect the heat to all parts of the room, and at the same time secure the draft.—*Scientific American.*

MANUFACTURE OF CUTLERY.

The improvements which have been made during the few past years in the manufacture of cutlery in this country are peculiarly manifest, and can not but be highly gratifying to every friend of improvement in the arts and manufactures in the Union. The facilities for manufacturing the finest and most beautiful cutlery have been increased, and the manufacturers exhibit a skill and ingenuity in many of the most delicate specimens of their arts that would be highly creditable to the older and more experienced establishments in Europe. The manufacture of razors, knives, &c., is quite a curiosity to one who has never witnessed the operation. The rapidity with which the various articles are produced from the raw materials as they pass through the hands of the various workmen, is truly astonishing. In the manufacture of the common table knife, in the workshops of Sheffield, (Eng.,) the whole process of drawing the steel from the bar, hammering it into form, welding the blade to the tang, hardening, tempering, hafting, finishing and polishing is altogether but the labor of a few minutes, although the various processes through which the knife passes is multitudinous. The steel bar forming the material for the blade is heated in the forge, and with a few strokes of the hammer reduced into the desired shape. A bar of iron is next heated, from which the tang is formed to fit into the handle, and welded on to the steel blade. All this is performed in five or six minutes by the most simple tools imaginable, and the blade in its rough state is completely formed. This next passes into the hands of the *filer*, who by means of a pattern made of hard steel, files it to its perfect shape, and it is passed into the hands of the hafter to be hafted or handled in ivory, horn, bone or some of the harder kinds of wood. This being accomplished, the knife is taken by the finisher, who gives the necessary polish, completing the process. In this manner every article, whether table-knife, pocket-knife, or pen-knife, passes by all these various steps and processes to its completion, through no less than sixteen hands, or altogether, *one hundred and forty-four separate stages of workmanship.*

In the manufacture of razors, the best and finest qualities of steel are selected, and like the knife, it passes through nearly the same number of hands, being completed by a process of grinding, by which the concavity of the sides is perfected and a fine edge produced. The best scissors are also made by a similar process, every pair passing through sixteen or seventeen hands, including about sixty operations, before they are ready for use. In Europe, and we believe also in this country, common scissors, pocket knives, &c., are cast, and riveted, including blades, handles, &c., and sold at exceedly low prices. In England many are manufactured and sold as low as six shillings sterling, or $1,50 per gross, and exported in vast quantities to all parts of the world.—*Farmer and Mechanic.*

Ladies' Department.

TO PRESERVE FRUIT.

Twenty-nine years ago, Betty Winal, then residing at Tarlton, bottled a quantity of white currants in their green state, being then in the 33d year of her age. Having kept them some time in a state of preservation, William, (her husband,) and she agreed that they should be kept while they both lived, and that they should be made into pies at the funeral of the one who should die first. The wife departed this life on the 2d of this month, and was interred at St. Peter's Church, Preston, on the 5th—the family having removed to Dawson Street, Preston. Their mutual pledge was fulfilled, and the pies made of these currants were served out, after returning from church, every attendant taking a slice. Though the currants had kept twenty-nine years, they were as fresh as if just taken from the trees. Any other fruit may be preserved in the same way by expelling the air and sealing over the cork air-tight.

Remarks.—We preserved gooseberries last season, as follows. The berries were picked while rather green, put into bottles, filling them full, then the bottles were filled to the top with water, and set in a kettle of cold water, over a fire, and allowed to remain till the water in the kettle boiled; then the bottles were taken out, corked tightly and set in the cellar. We used these gooseberries recently, and they could not be distinguished from fresh ones. One person who partook of them supposed that they were fresh from the market. It is said that various kinds of fruit may be kept in this manner for years. It is a very cheap and convenient way.—Ed. N. E. Farmer.

HOW TO TOAST WELL.

The different operations of cooking are so common and so often performed by persons who make no pretension to a medium amount of science or learning, that a notion is abroad that scientific principles have no relation to them; but that the whole business of cooking is a mere art, of which it is only necessary to know the routine. That cooking may be done, and very good cooking too, in this way, is very true; but it is none the less a fact that the most important scientific principles are at the bottom of every well cooked dinner; and that the cook is a practical chemist, whether she knows it or not. For instance, in the small matter of toasting a piece of bread there is as much skill required as to manage a twenty horse steam engine, though failure in the business might not be quite as disastrous. But probably not one cook in ten thousand ever thought of the matter in that light, or as involving any science at all. We have just stumbled upon an article of some length on this subject written by we know not whom, but which will illustrate all we have said above.—*Prairie Farmer.*

In toasting bread we wish to get out the water that remains, and which makes the bread cold, waxy, and heavy of digestion. Perhaps we shall be best understood if we first explain what makes bad toast of a piece of bread, or rather no toast at all, but merely a piece of bread with two burned surfaces, more wet and waxy in the heart than ever, and which not a particle of butter will enter, and if put by for an hour or two and allowed to cool, will get as tough as possible. If the slice of bread is brought into close contact with a strong fire, the surface becomes covered with, or rather converted into charcoal, before the heat produces any effect on the interior of the slice. This being done, the other side is turned, and has its surface converted into charcoal in the same manner. The consequence of this will be that not a particle of butter will enter such a piece of toast, but only remain upon the surface, and if vexed with additional fire, turns to a most rancid oil of the most unwholesome description. Charcoal, as every one knows, is a very bad conductor of heat, and, as such, is used between the cylinders and casings of steam engines—it is of no consequence whether the said charcoal be formed of wood, of flour, or any other substance, for its qualities are in every case the same. Now, when the surfaces of the slice of bread are over-charred in this manner, there is an end to all toasting, as no heat can be communicated to the interior, and not one drop can be evaporated or drawn away. In this state the slice of bread may be wholly burned to charcoal; but until it is altogether so burned the unburned part will become more and more wet and unwholesome. Hence, if you would have a slice so toasted as to be pleasant to the palate, and wholesome and easily digested, never let one particle of the surface be charred. Chestnut brown is even too far deep for a good toast; and the color of a fox is rather too deep. The nearer it can be kept to a straw color, the more delicious to the taste, and the more wholesome it will be. The method of obtaining this is very obvious. It consists in keeping the bread at the proper distance from the fire, and exposing it to a proper heat for a due length of time.

Butter in masses (whatever may be its quality) is too heavy for the stomach; though butter divided with sufficient minuteness and not suffered to pass into oil, makes a most valuable addition to many kinds of food. The properly toasted bread absorbs the butter, but does not convert it to oil; and both butter and farina are in a very minute state of division, and one serving to expose the other to the free action of the gastric fluid in the stomach; and that this fluid shall be able to penetrate the whole mass of the food, and act upon it in small portions, is the grand secret of healthful digestion; so that when a slice of toast is rightly prepared, there is, perhaps, not a lighter article in the whole vocabulary of cookery. Unfermented brown bread, treated in this way, forms an excellent substitute for biscuits, and is in some respects superior, as it may be eaten with impunity by those persons with whom biscuits may disagree.

DRESS OF ENGLISH WOMEN.

The women of England understand better what is due to propriety in this respect. They may and do dress gorgeously in their assemblies, in their private parties of fashionable resort; but in the street, they are marked with great plainness of dress. Sober and delicate colors, absence of chains and diamonds, the close-fitting hat, neat mantle, and thick shoe, attest their thorough good sense in the matter. We wish American ladies would copy them in this thing, instead of aping the follies of the frivolous Parisians.

Will the time ever come when a cultivated intellect shall preponderate over dry goods? or a correct and delicate perception of real comfort and beauty, over the absurd and continually varying fashions of the day?

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